

**Aim:** To assess the feasibility and effectiveness of a laparoscopic virtual reality home simulation training programme (LHSTP) for core surgical trainees.

**Methods:** 20 Core Surgical trainees were recruited to the LHSTP trial. Baseline laparoscopic skills were assessed using Simbionix (TM) LAP Mentor. 10 trainees received additional training on a portable virtual reality laparoscopic trainer using MySimendo (TM) Laparoscopy online Curricula (MySim group). 6 trainees received no additional training (control group). All recruited trainees then repeated the baseline assessment. In addition, MySim trainees completed pre and post programme questionnaires. Throughout the trial period, both groups had access to a LAP Simendo VR simulator between the hours of 9-17:00 at the regional simulation training centre (RSTC).

**Results:** All MySim trainees, post-LHSTP, reported improved confidence in "use of instruments" ( $p=0.001$ ), "tissue handling" ( $p=0.009$ ), "manual dexterity" ( $p=0.01$ ), "3-D visuo-spatial awareness" ( $p=0.003$ ) and "depth perception" ( $p=0.022$ ). All recruited trainees improved their assessed baseline laparoscopic skills. No trainees accessed the available LAP Simendos at the RSTC during the trial period.

**Conclusion:** The LHSTP is a feasible and effective approach to core laparoscopic skills training. It proved highly popular with trainees and allows them to access training outwith their time restricted training schedule.

## ASIT ORAL POSTER: 0313: MINIMALLY INVASIVE SURGERY TRAINING USING MULTIPLE PORT-SITES TO IMPROVE PERFORMANCE

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**Background:** Structural learning theory suggests that experiencing motor task variation enables the CNS to extract general rules regarding tasks with a similar structure which can be applied to novel situations. MIS requires different port sites but switching ports alters the limb movements required to produce the same control of the instrument. The purpose of this study was to determine if structural learning theory can be applied to MIS.

**Methods:** A tablet laptop running bespoke software was placed within a laparoscopic box trainer and connected to a monitor. Participants used a laparoscopic grasper to track a moving dot on the screen. There were 2 training groups: the M-group ( $n = 10$ ) who trained using multiple port-sites, and the S-group ( $n = 10$ ) who trained using a single port-site. A novel port-site was used at. Performance metrics included: SACF (measure of speed and accuracy) and NJ (normalised jerk - measure of movement 'smoothness').

**Results:** The M-group showed a statistically significant performance advantage over the S-group at test as indexed by improved SACF ( $p<0.05$ ) and NJ ( $p<0.05$ ).

**Conclusions:** There are potential benefits of incorporating a structural learning approach within MIS training. This may have applications when training surgeons and developing surgical simulation devices.

## ASIT ORAL POSTER: 0358: STRATEGIES FOR INHIBITION OF CHEMOKINE (CCL2) MEDIATED MONOCYTE MIGRATION

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CCL2 mediated monocyte migration has been shown to play an integral role in the pathogenesis of lethal reperfusion injury (LRI) following cardiopulmonary bypass operations, and is associated with 10% post-operative mortality and 25% morbidity.

**Study Aim:** In vitro analysis of synthetic CCL2 inhibitors (C1-C5) and GAG binding peptides (P1-5) in inhibiting CCL2 mediated monocyte migration, as potential therapeutics for the treatment of LRI.

**Methods and Results:** Chemotaxis assays were used to screen the potency of all compounds and peptides on CCL2 mediated monocyte migration. The most potent were further analysed using activated trans-endothelial chemotaxis (in vitro model of inflamed capillary wall). P1-5, C1 and C5 showed the most inhibition.

The inhibitory effects of 50µM of C5 on monocyte adhesion to VCAM-1 under flow and sheer stress conditions was analysed using the Cellix system, showing statistically significant reductions ( $p<0.05$ ) in adhesion. Western blotting showed no inhibitory effects of C1 or C5 on CCL2 mediated intracellular expression of p-ERK1/2.

**Conclusion:** In vitro analysis of synthetic CCL2 inhibitors and GAG binding peptides has shown these strategies to be effective in blocking CCL2 mediated monocyte migration. Further studies to define the mechanism of action of these compounds will aid their development as anti-LRI therapeutics.

## ASIT ORAL POSTER: 0450: SURGICAL LOGBOOK COMPETENCE, ARE WE KIDDING OURSELVES?

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**Aim:** Surgical logbooks form an important part of objective evidence for proving competency and can affect career progression. The electronic logbook allows trainees to indicate their level of involvement for each procedure. There is, however, little formal training on how to code levels of supervision, which may lead to discrepancies between trainees.

**Methods:** An email survey was sent to all ASIT members listed in the 2010 yearbook, investigating training on logbook completion and to check understanding of various levels of supervision using example scenarios.

**Results:** 197 responses were received. 20% were CT1-3, 70% ST3-8 and 10% were post CCT. 91% had received no formal training in completion of the surgical logbook. Whilst in some scenarios there was concordance in others there was discrepancy as to level of supervision, with up to 25% of responders misclassifying levels of supervision. Overall, the feeling was that for an operation to be classified as "supervised trainer scrubbed" the trainee had to have performed over 50% of the operation.

**Discussion/Conclusions:** There is little formal training on how to complete the surgical logbook and there are inconsistencies when coding level of supervision. The level of supervision that responders felt was appropriate to consider a level of "supervised trainer scrubbed" was less than the 30/70 split recommended in the logbook guidance.

## ASIT ORAL POSTER: 0607: A NOVEL HYBRID MINIMALLY INVASIVE TREATMENT OF RECURRENT SUPERFICIAL VENOUS INSUFFICIENCY: A ONE-YEAR PROSPECTIVE CASE SERIES

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**Introduction:** Recurrent superficial venous-insufficiency (SVI) rates in those previously treated with open surgery remains high. This prospective case-series aimed to establish the efficacy of an alternative novel hybrid minimally invasive treatment.

**Methods:** Patients with recurrent symptomatic SVI (C2-4) following previous open surgery were assessed and found to have neovascularisation (NV) in continuity with an incompetent anterior saphenous vein (ASV) and/or GSV. All were listed for neo-hybrid treatment by duplex guided EVLA-catheter directed 3% Sodium Tetradecyl-Sulphate foam (FS) delivery to NV and ASV and/or GSV EVLA ablation.

**Results:** 46 patients aged 52 years (IQR 38 - 60) with C2-4 recurrent SVI were treated; 16 were lost-to-follow-up at one-year. One-year duplex demonstrated; 1 case of NV, 1 of recanalisation, 7 cases of residual below puncture reflux and 1 above-knee residual reflux. Complications included four self-limiting episodes of phlebitis and paraesthesia.

Treatment satisfaction was high at 12 (10/10; IQR 10-9) and 52 weeks (10/10; IQR 10-6). AVVQ and EQ5D analysis showed improvement from baseline to one year; AVVQ 14.56 to 3.25 ( $p=0.000$ ); EQ5D 0.796 to 1 ( $p$ -value 0.013).

**Conclusion:** A hybrid-EV procedure is an efficacious approach for the treatment of SVI recurrence; with few complications, rapid recovery and improvements in quality of life.

## ASIT ORAL POSTER: 0619: HUMAN ENDOTHELIAL PROGENITOR CELLS (EPCS) INCORPORATE INTO DERMAL SUBSTITUTES AND FORM A THREE-DIMENSIONAL MICROVASCULAR NETWORK

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Burn injury may be life-threatening; consequent scars have important functional and aesthetic implications. Various biological or synthetic dermal substitutes (DS) may be used before skin grafting, to improve scarring by reconstructing the native dermis. Vascular growth into DS can